

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of listing of claims, and listing of claims in the application.

Listing of Claims

1. (Currently Amended) A carbon monolith comprising a robust carbon monolith characterized by a skeleton size of at least 100 nm, and a hierarchical pore structure having essentially uniform sized macropores and mesopores, wherein the carbon monolith does not undergo structural collapse at 525,000 times TEM magnification.
2. (Original) A carbon monolith in accordance with claim 1 wherein said carbon monolith is characterized by a skeleton size of 100 nm to 20 μm .
3. (Original) A carbon monolith in accordance with claim 2 wherein said carbon monolith is characterized by a skeleton size of 200 nm to 10 μm .
4. (Original) A carbon monolith in accordance with claim 3 wherein said carbon monolith is characterized by a skeleton size of 400 nm to 1 μm .
5. (Original) A carbon monolith in accordance with claim 1 wherein said macropores are of a size range of 0.05 μm to 100 μm .
6. (Original) A carbon monolith in accordance with claim 5 wherein said macropores are of a size range of 0.1 μm to 50 μm .
7. (Original) A carbon monolith in accordance with claim 6 wherein said macropores are of a size range of 0.8 μm to 10 μm .

8.-9. (Canceled)

10. (Original) A carbon monolith in accordance with claim 9 wherein said mesopores are of a size range of 5 nm to 30 nm.

11. (Canceled)

12. (Currently Amended) A monolithic chromatography column comprising a robust monolithic carbon stationary phase disposed in a chromatography column support, said monolithic carbon stationary phase characterized by a skeleton size of at least 100 nm, and a hierarchical pore structure having essentially uniform sized macropores and mesopores, wherein the carbon monolith does not undergo structural collapse at 525,000 times TEM magnification.

13. (Original) A monolithic chromatography column in accordance with claim 12 wherein said robust monolithic carbon stationary phase is characterized by a skeleton size of 100 nm to 20 μm .

14. (Original) A monolithic chromatography column in accordance with claim 13 wherein said robust monolithic carbon stationary phase is characterized by a skeleton size of 200 nm to 10 μm .

15. (Original) A monolithic chromatography column in accordance with claim 14 wherein said robust monolithic carbon stationary phase is characterized by a skeleton size of 400 nm to 1 μm .

16. (Original) A monolithic chromatography column in accordance with claim 12 wherein said monolithic carbon stationary phase is characterized by a hierarchical porous

structure.

17. (Original) A monolithic chromatography column in accordance with claim 16 wherein said hierarchical porous structure comprises macropores and mesopores.

18. (Original) A monolithic chromatography column in accordance with claim 17 wherein said macropores are of a size range of 0.05 μm to 100 μm .

19. (Original) A monolithic chromatography column in accordance with claim 18 wherein said macropores are of a size range of 0.1 μm to 50 μm .

20. (Original) A monolithic chromatography column in accordance with claim 19 wherein said macropores are of a size range of 0.8 μm to 10 μm .

21. (Original) A monolithic chromatography column in accordance with claim 17 wherein said mesopores are of a size range of 18 Å to 50 nm.

22. (Original) A monolithic chromatography column in accordance with claim 21 wherein said mesopores are of a size range of 0.5 nm to 40 nm.

23. (Original) A monolithic chromatography column in accordance with claim 22 wherein said mesopores are of a size range of 5 nm to 30 nm.

24. (Original) A monolithic chromatography column in accordance with claim 12 wherein said monolithic carbon stationary phase further comprises graphite.

25. (Currently Amended) A method of preparing a robust carbon monolith comprising the steps of:

- a. providing a colloidal solution comprising a carbon monolith precursor having a porosity-generating fugitive phase dispersed therein, said fugitive phase comprising a low-charring polymer mesoparticles and microparticles;
- b. carbonizing said carbon monolith precursor to form a carbon monolith:
and
- c. removing said fugitive phase from said carbon monolith to form a robust, porous carbon monolith characterized by a skeleton size of at least 100 nm, and a hierarchical pore structure having macropores and mesopores, wherein removal of the low-charring polymer provides the mesopores.

26. (Original) A method in accordance with claim 25 wherein said carbon monolith precursor further comprises at least one carbonizable polymer.

27. (Original) A method in accordance with claim 25 wherein said porosity-generating fugitive further comprises a material that is soluble in a solvent that does not harm said porous carbon monolith.

28. (Original) A method in accordance with claim 25 wherein said porosity-generating fugitive further comprises silica.

29. (Original) A method in accordance with claim 25 further comprising, after said removing step, an additional step of graphitizing said porous carbon monolith.

30. (Original) A method in accordance with claim 25 wherein said carbon monolith is characterized by a skeleton size of 100 nm to 20 μm .

31. (Original) A method in accordance with claim 30 wherein said carbon monolith is characterized by a skeleton size of 200 nm to 10 μm .

32. (Original) A method in accordance with claim 31 wherein said carbon monolith is characterized by a skeleton size of 400 nm to 1 μm .

33. (Original) A method in accordance with claim 25 wherein said macropores are of a size range of 0.05 μm to 100 μm .

34. (Original) A method in accordance with claim 33 wherein said macropores are of a size range of 0.1 μm to 50 μm .

35. (Original) A method in accordance with claim 34 wherein said macropores are of a size range of 0.8 μm to 10 μm .

36.-37. (Canceled)

38. (Original) A method in accordance with claim 37 wherein said mesopores are of a size range of 5 nm to 30 nm.

39. (Currently Amended) A method of preparing a robust carbon monolith comprising the steps of:

- a. providing a colloidal solution comprising a carbon monolith precursor having a particulate porosity-generating fugitive phase dispersed therein, said fugitive phase comprising mesoparticles and microparticles; and
- b. heating said carbon monolith precursor to carbonize said carbon monolith precursor, and to remove said fugitive phase from said carbon monolith, to form a robust, porous carbon monolith characterized by a skeleton size of at least 100 nm, wherein removal of said fugitive phase comprising mesoparticles and microparticles provides ~~and~~ a hierarchical pore structure having macropores and mesopores.

40. (Original) A method in accordance with claim 39 wherein said carbon monolith precursor further comprises at least one carbonizable polymer.

41. (Currently Amended) A method in accordance with claim 39 wherein said porosity-generating fugitive phase further comprises a material that is thermally removable at a temperature that does not decompose said porous carbon monolith.

42. (Original) A method in accordance with claim 39 wherein said porosity-generating fugitive phase further comprises at least one material selected from the group consisting of surfactants and low-charring polymers.

43. (Original) A method in accordance with claim 39 further comprising, after said removing step, an additional step of graphitizing said porous carbon monolith.

44. (Original) A method in accordance with claim 39 wherein said carbon monolith is characterized by a skeleton size of 100 nm to 20 μm .

45. (Original) A method in accordance with claim 44 wherein said carbon monolith is characterized by a skeleton size of 200 nm to 10 μm .

46. (Original) A method in accordance with claim 45 wherein said carbon monolith is characterized by a skeleton size of 400 nm to 1 μm .

47. (Original) A method in accordance with claim 39 wherein said macropores are of a size range of 0.05 μm to 100 μm .

48. (Original) A method in accordance with claim 47 wherein said macropores are of a size range of 0.1 μm to 50 μm .

49. (Original) A method in accordance with claim 48 wherein said macropores are of a size range of 0.8 μm to 10 μm .

50. (Original) A method in accordance with claim 39 wherein said mesopores are of a size range of 18 Å to 50 nm.

51. (Original) A method in accordance with claim 50 wherein said mesopores are of a size range of 0.5 nm to 40 nm.

52. (Original) A method in accordance with claim 51 wherein said mesopores are of a size range of 5 nm to 30 nm.

53.-81. (Canceled)